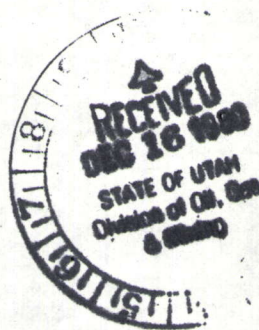


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1. Applicant: Luki Milling Corporation
P. O. Box 1075
Vernal, Utah 84078

2. Location

Tibbetts Placer Mine is located about 35 miles N E of Moab on the north bank of the Colorado River in Grand County Utah. Exact location and legal description are shown in accompanying documents.

This operation is in a Class II area for PSD purposes. ?

3. Description

Luki Milling Corporation has done sampling and testing to determine the economic feasibility of extracting placer gold present. Development procedures are based on results of this testing program.

As planned, work will include development of an open pit, surface operation. This will include the open pit itself, a water storage pit, settling pond, processing plant, waste stockpile and topsoil stockpile. Also included will be support facilities such as office trailer, fuel storage tanks and such.

Electrical power will initially be generated, and as soon as feasible will be brought to site by extending existing power line from about 1 mile down stream.

4. Emissions

Point source emissions are generated by the front end loader used to handle mined material. Table I presents calculated point source emissions.

Fugitive dust emissions come from conveyors, waste material handling, and waste material and top soil stockpiles, also traffic on unpaved access roads.

Waste material stockpile will cover approximately one acre of ground to a height of about 20 feet and will contain \pm 30,000 cubic yards of gravel and sand. Particle sizing will be \pm 100 microns, as all fines are screened out for processing so tendency for emissions to become airborne will be very slight.

This stockpile will be in place for approximately two years.

Topsoil stockpile will be about fifty by one hundred feet and twenty feet in height, containing \pm 4000 cubic yards.

Side slopes of both stockpiles will be approximately 2:5 ratio.

This material will be placed in the stockpile in a damp condition. Both stockpiles will have the longer dimension paralleling the direction of prevailing spring winds which are S W to N E in this area. Other than about two months in the spring, winds are relatively light in this area.

Once stockpiles are established, the downwind face will be sprayed with a chemical suppressant to control airborne emissions.

MA,
Is this
an acceptable
practice for
topsoil protection?
?

A third small stockpile containing recovered black sands will be established, however this will probably never exceed 100 cubic yards, and will be hauled away periodically.

Project site is 1.4 miles from a paved road. Estimated traffic will involve six round trips per day from highway to site, for a total of 16.8 miles per day, for an average of 300 days per year or 504 miles per year.

Assuming 250 days per year are dry (avg. annual rainfall is about 8 inches), silt content of unpaved road is 15%, and average speed on access road is 10 mph, the annual dust emission from this source would be approximately .5 tons per year which should not be a significant factor.

5. Solid Waste Control

Project site clearing and mine site preparation will involve cutting of brush and some trees to clear work area. Stumps will be pulled, and all waste and debris stockpiled to be buried when backfilling of pit is commenced.

Is this acceptable practice to State Lands?

5.1 Amalgamated Material

The screened fine material will go through the amalgamation process, then be separated to reclaim the mercury. The low gravity waste material will be discharged from the separator, and go through a screw type dewatering classifier. At this point, the damp fines will go to the topsoil stockpile, and the muddy water will be piped to a settling pond. Testing will be performed initially on both the fine solids, and on the water going to the settling pond. Tests will be for total mercury and for dissolved or EP Toxicity Mercury. These tests will be done by Ford Laboratories in Salt Lake City. Periodic testing will be scheduled after start up.

What are the damp fines (composition)?

Do fine solids the same as "damp fines"?

What is periodic? Once a week, month, year?

It is "expected" that extraction processes will leave a fine solid and liquid recovery which does not contain excess mercury residues. If residues of mercury are within limits, then the fine solids will go direct to topsoil stockpile and the muddy water will go to an unlined settling pond where much of the water will be clarified and recirculated.

If tests indicate presence of excessive amounts of mercury in the solid waste after it goes through the classifier, then another washing step can be added to remove excess mercury. In case of excess mercury in the water, a lined settling pond will be used so the mercury can be reclaimed from settled solids in the pond.

6. Water Pollution

By excersizing good housekeeping practices, there should be very slight to no likelihood of pollutants entering the

Colorado River. Waste water from the mining operation will go into the settling pond and any extraneous material should be filtered out within a short distance so the ground water will not be affected. Dissolved mercury is not likely to be a factor.

How? → Once stockpiles are established, runoff during rainy periods will be channeled to the settling pond. Settling pond will have dike slopes of 1 1/2 to 1. Dike surrounding pond will be 4' in height and have a 10' top surface. Pond level during operation will be maintained at no more than the surrounding ground surface and preferably 1 to 2 feet below ground surface so there is adequate freeboard to prevent possibility of washouts or overflow.

Will State Engineer need to approve the design of this impoundment structure?

7. Sanitation

Potable water will have to be hauled from a spring several miles away. Testing will be done on the ground water supply to determine if it is safe for household use other than drinking and cooking.

Portajohn type sanitary facilities will be maintained at the processing site. Since two trailers will be placed on private property near the site, a septic tank and absorption system will be installed there. These systems will be constructed in accordance with the Code of Waste Disposal Regulations, Part IV and Part V. + Approved by State Health (design + construction)

Table I

Detroit Diesel 6V 53 Naturally Aspirated 216HP

NOX	13.5 gms/brake HP Hr.	
	$13.5 \times 216 = 2916 \text{ gm/hr.}$	
	$2916 \times .002205 = 6.43 \text{ \#/hr.}$	
	$6.43 \text{ \#/hr.} \times 10 \text{ hr. day} = 64.3 \text{ \#/day}$	
	$64.3 \times 300 \text{ day/hr.} = 19,290 \text{ \#/yr.}$	
	$19,290 \text{ \#/2000\#/Ton} =$	9.645 Ton/yr.
CO	$2.8 \text{ gm/brake HP hr.} \times 216 \text{ HP} = 604.8 \text{ gm/hr.}$	
	$604.8 \times .002205 = 1.33 \text{ \#/hr.}$	
	$1.33 \times 10 \text{ hr} = 13.3 \text{ \#/day}$	
	$13.3 \times 300 = 3990 \text{ \#/yr.}$	
	$3990/2000 = 1.995 \text{ Ton}$	1.995 Ton/yr.
HC	0.7 gm/brake HP hr.	
	$.7 \times 216 = 151.2 \text{ gm/hr.} \times 10 = 15,120 \text{ gm/day}$	
	$1512 \times 300 = 453,600 \text{ gm/yr.}$	
	$453,600 \text{ gm} \times .002205 = 1000.2 \text{ \#/yr.}$	
	$1000/2000 = .5$	<u>.5 Ton/yr.</u> 12.14 Ton/yr.

SO₄ is negligible.

BACT

- * 1. Retard ignition
- 2. Air to fuel ratio changes
- 3. Manifold air cooling
- 4. Derate power output (at constant speed)